

02/26/14 Agenda:

- Update Properties Book
 - Fill in diagrams on the cover
- Review Quiz
- Review Homework
 - Worksheet 7 - Rectangles
- Section 8.4 - Properties of Rhombi and Squares
- Update Properties Book
 - Properties of a Rhombus
 - Properties of a Square
- Homework
 - Worksheet 8 - Squares & Rhombi

Section 8.4 - Properties of Rhombuses & Squares

Target 8E

February 26, 2014

Goal: Apply properties of special quadrilaterals (rectangles, rhombi, squares, kites, and trapezoids) to find missing information.

Quadrilateral

Four sided figure

Sum of angles = 360°



Parallelogram

All properties of a Quadrilateral plus:

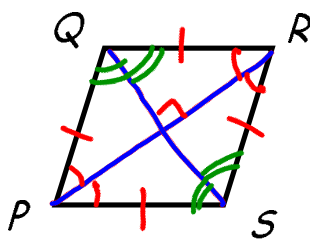
- Opposite sides \parallel
- Opposite sides \cong
- Opposite angles \cong
- Consecutive angles supplementary
- Diagonals bisect each other



Rhombus

All properties of a Parallelogram plus:

- ALL 4 SIDES \cong
- DIAGONALS ARE \perp
- DIAGONALS BISECT THE CORNER ANGLES



P1 PROP \square

P2 PROVING \square

P3 RECT

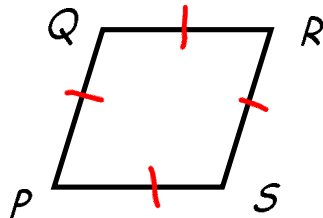
P4 RHOMBUS

Section 8.4 - Properties of Rhombuses & Squares

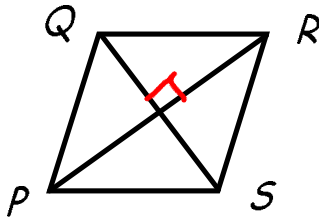
Target 8E

February 26, 2014

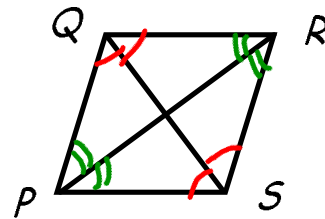
Proving it's a Rhombus



* A Quadrilateral is a rhombus if and only if it has 4 congruent sides.



* A Parallelogram is a rhombus if and only if its diagonals are perpendicular.

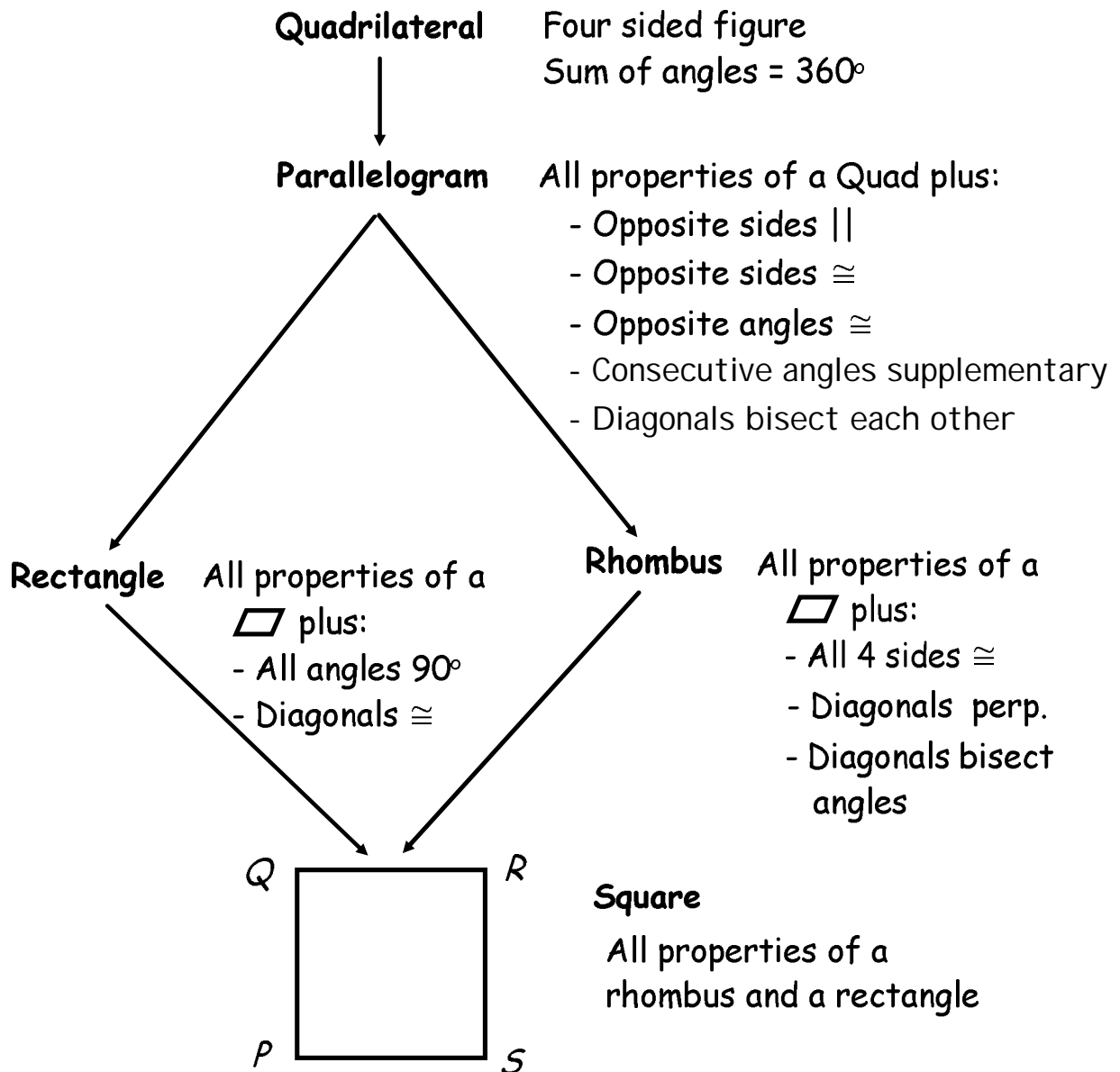


* A Parallelogram is a rhombus if and only if each diagonal bisects a pair of opposite angles.

Section 8.4 - Properties of Rhombuses & Squares

Target 8E

February 26, 2014

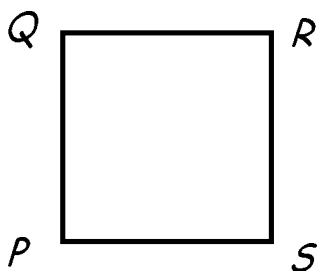


Section 8.4 - Properties of Rhombuses & Squares

Target 8E

February 26, 2014

Proving it's a Square

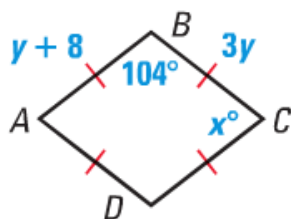


* A Quadrilateral is a square if and only if it BOTH a rhombus and a rectangle.

Section 8.4 - Properties of Rhombuses & Squares

Target 8E

February 26, 2014



$$y = 4$$

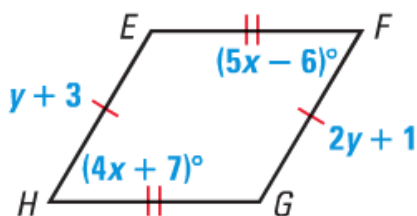
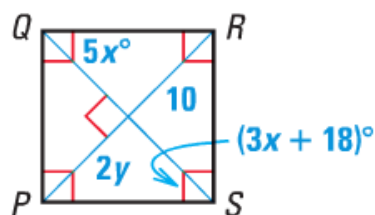
$$y + 8 = 3y$$

$$8 = 2y$$

$$4 = y$$

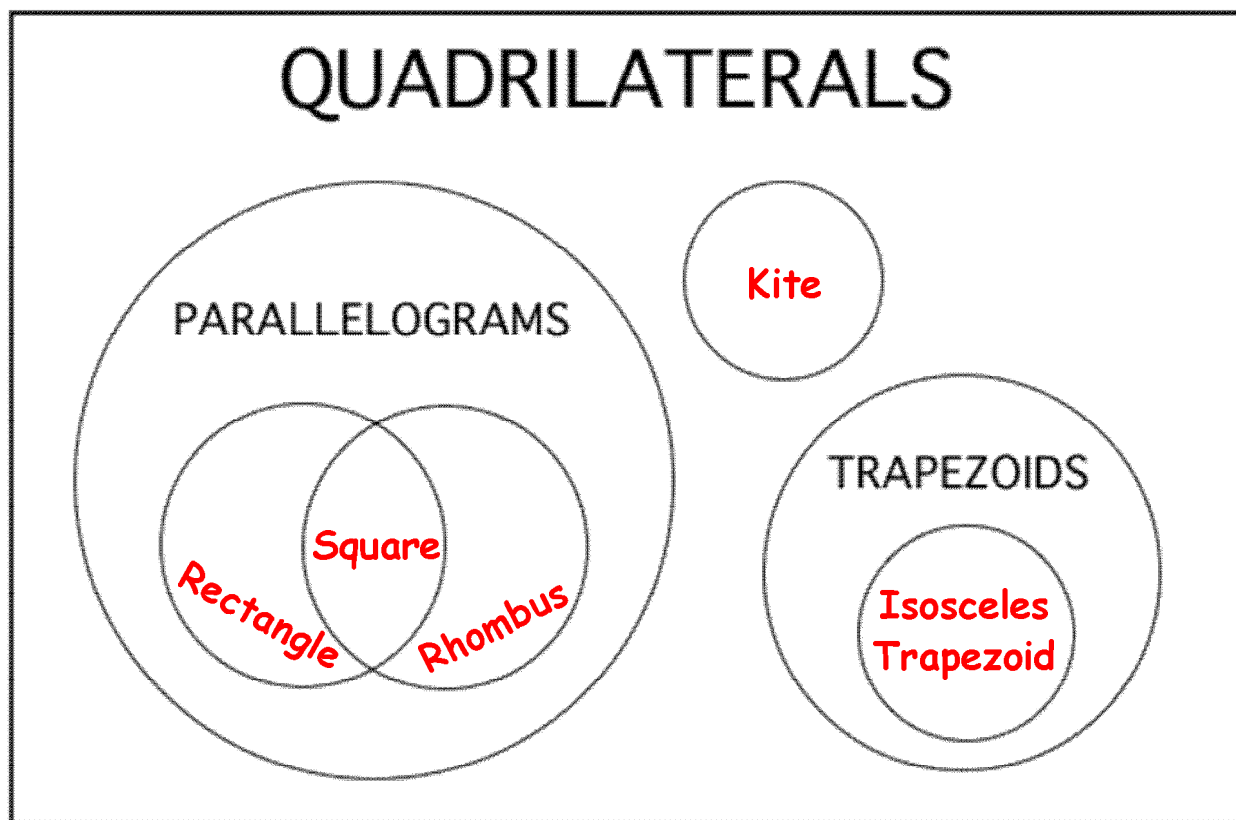
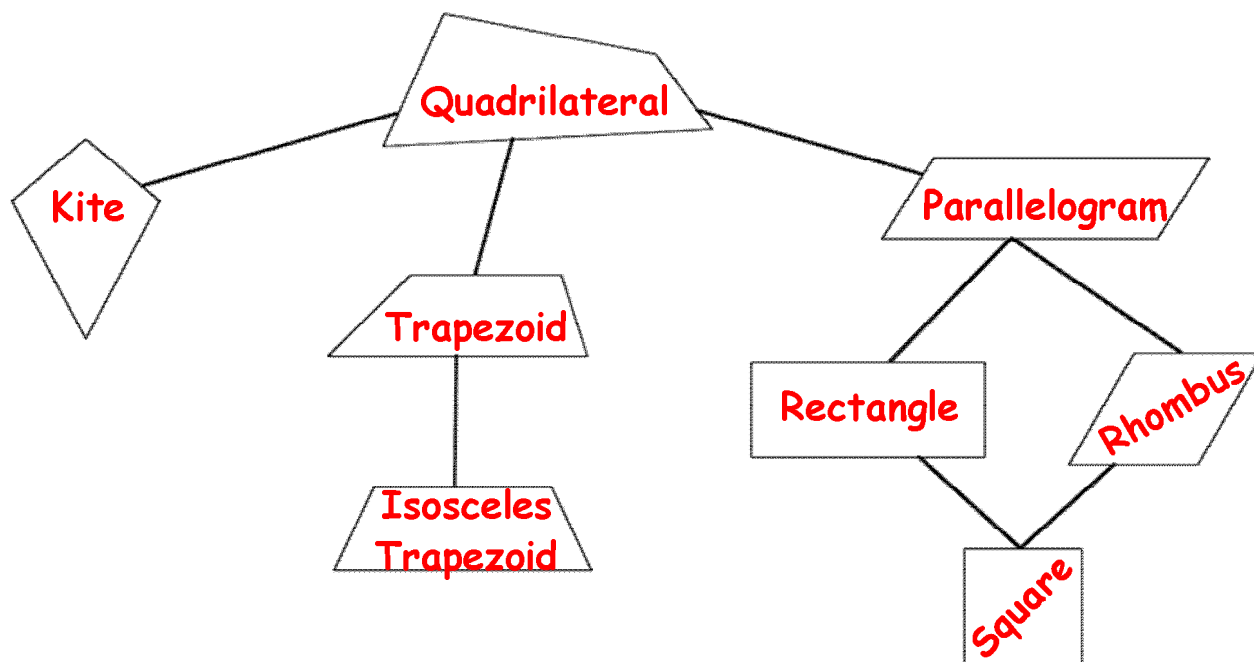
$$104 + x = 180$$

$$x = 76$$



Warm Up -

Get your properties booklet out:



Quadrilaterals Book

Properties of a Parallelogram.

Page 1

Quadrilateral



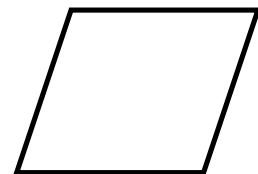
Parallelogram

Parallelogram:

A quadrilateral with BOTH pairs of opposite sides parallel.

Properties:

- Opposite sides are congruent.
- Opposite angles are congruent.
- Consecutive angles are supplementary.
- The diagonals bisect each other.



Quadrilaterals Book

Proving a Quadrilateral is a Parallelogram.

Proving it's a Parallelogram:

Page 2

Show any of the following:

- Both pairs of opposite sides parallel.
- Both pairs of opposite sides are congruent.
- Both pairs of opposite angles are congruent.
- ONE pair of opposite sides are both congruent and parallel
- The diagonals bisect each other.

Properties of a Rectangle.

Page 3

Quadrilateral



Parallelogram



Rectangle



Rectangle Properties:

- All properties of a Parallelogram plus:
 - It has 4 right angles.
 - The diagonals are congruent.

Proving it's a Rectangle:

- If a quadrilateral has 4 right angles, it's a Rectangle.
- If the diagonals of a parallelogram are congruent, it's a Rectangle.

Properties of a Rhombus.

Page 4

Quadrilateral



Parallelogram



Rhombus



Rhombus Properties:

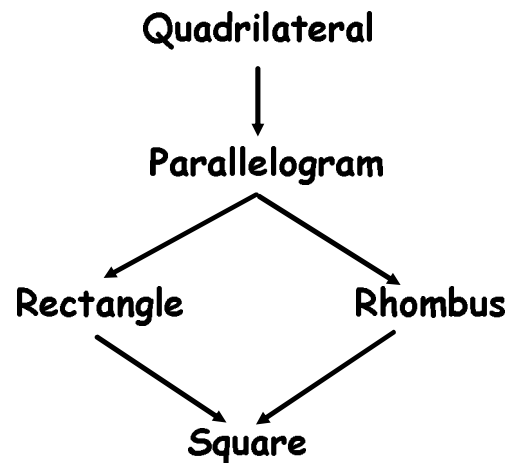
- All properties of a Parallelogram plus:
 - It has 4 congruent sides.
 - Its diagonals are perpendicular.
 - Each diagonal bisects the pair of opposite angles.

Proving it's a Rhombus:

- If a quadrilateral has 4 congruent sides, it's a Rhombus.
- If the diagonals of a parallelogram are perpendicular, it's a Rhombus.
- If each diagonal of a parallelogram bisect a pair of opposite angles, it's a Rhombus.

Properties of a Square.

Page 5



Square Properties:

- All properties of a Rhombus and a Rectangle.

Proving it's a Square:

- If a quadrilateral is BOTH a Rhombus and a Rectangle, it's a Square.